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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/580,154

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EXAMINER

EVANS, GEOFFREY S

ART UNIT

PAPER NUMBER

3742

MAIL DATE

DELIVERY MODE

02/13/2009

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/580,154	YAMADA ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Geoffrey S. Evans	3742	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 26 November 2008.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1 and 3 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1 and 3 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

### DETAILED ACTION

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

3. Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over Masahito Hashimoto et al. in Japan Patent No. 62-173,142 in view of Shichizawa in Japan Patent No. 5-200,626. Masahito Hashimoto et al. in Japan Patent No. 62-173,142 discloses inputting the machining depth, removal surface area (including projected area) and removal volume. Clearly from figure 2 it is clear that the removal volume is based on the removal surface area and the machining depth (volume= surface area times depth). Applicant's claim language does not preclude determining the volume from the surface area and the depth and then setting (inputting) all of these values into a machine. Masahito Hashimoto et al. further disclose selecting from a set plurality of machining

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conditions and calculating an erosion rate (removal volume rate), but not completing electric discharge machining when a machining time T has elapsed from the start of electric discharge machining. Schichizawa teaches sending a signal to a judgment mechanism when a machining time (T) has elapsed from the start of electric discharge machining. It would have been obvious to adapt Masahito Hashimoto et al. in view of Shichizawa to provide this to send a control signal to the control unit to stop machining to prevent excessive machining after machining is calculated to be complete.

4. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Masahito Hashimoto et al. in Japan Patent No. 62-173,412 in view of Shoji et al. in Japan Patent No. 1-289,624. Masahito Hashimoto et al. in Japan Patent No. 62-173,142 discloses inputting the machining depth, removal surface area (including projected area) and volume. Clearly from figure 2 it is clear that the removal volume is based on the removal surface area and the machining depth (volume = surface area times depth). Masahito Hashimoto et al. further discloses obtaining an erosion rate (removal amount per single discharge) based on a particular set of machining conditions but not completing electric discharge machining when a number of discharges have been completed from the start of machining. Shoji et al. teach completing electric discharge machining when a number of machining pulses is reached. It would have been obvious to adapt Masahito Hashimoto et al. in view of Shoji et al. to provide this to stop machining to prevent excessive machining after machining is considered to be complete.

5. Applicant's arguments filed 26 November 2008 have been fully considered but they are not persuasive. Japan Patent No. 62-173,412 discloses setting a removal volume must be related to the machining area and depth (dimension of a material to be removed) since if a flat surface is created (see figure 3 of Japan Patent No. 62-173,412) then  $\text{removal volume} = \text{machining area} \times \text{machining depth}$ . The claim language currently in claims 1 and 3 does not preclude an operator from determining the removal volume mentally and then setting this value into the machine of Japan Patent No. 62-173,412. Japan Patent No. 62-173,142 outputs a machining time T that is determined by the volume and the erosion rate. While Japan Patent No. 62-173,142 discloses estimating the time required for machining the volume, Schichizawa sends a signal when machining is completed. Applicant's argument that Shichizawa's "surface finishing" cannot remove material from a workpiece is not accurate since the electric discharge machining performed by Shichizawa removes material. Similarly Shoji removes material by electric discharges.

6. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

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the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Goto et al. in U.S. patent No. 5,765,955 discloses starting in column 3, last line: "A rate of machining a work piece  $V$  can be obtained by a product of a volume  $v$  of the material removed from the work piece 102 by a single electric discharge spike and a number of pulses of an effective electric discharge  $n$  per unit period of time, or a machined area  $S$  and a rate of machining 1 in the Z-axial direction per unit period of time." . Harukawa in Japan Patent No. 57-41,131 discloses as shown in the figures 4-7 lowering surface roughness by removing material by electric discharge machining.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Geoffrey S. Evans whose telephone number is (571)-272-1174. The examiner can normally be reached on Mon-Fri 7:30AM to 4:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tu Hoang can be reached on (571)-272-4780. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Geoffrey S Evans/  
Primary Examiner, Art Unit 3742